

Abstract Submitted
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Infrasound Propagation in the Atmospheric Conditions of Tornado Producing Storms¹ TREVOR WILSON, Oklahoma State University-Stillwater, REAL KC, BRIAN ELBING, Oklahoma State University - Stillwater, MATTHEW VAN DEN BROEKE , University of Nebraska Lincoln — Tornado producing storms have been shown to emit sound below the threshold of human hearing (20 Hz), also known as infrasound. Infrasound can be detected over long ranges due to the low atmospheric attenuation at these frequencies. The current work computationally investigates the propagation of infrasonic signals through specific atmospheric conditions. This is done by utilizing a collection of atmospheric modeling codes known as AVO-G2S and a collection of numerical models for long range propagation of infrasound known as NCPAprop. These two open source codes are used to provide an estimation on how a particular infrasonic signal would behave on a specific date and time. Thus, this work will report findings on the propagation of infrasound utilizing historic meteorological data to analyze the atmospheric conditions during tornado producing storms that occurred in 2017 and 2019 in Oklahoma. Specifically, the likelihood is estimated that the emitted infrasound from a storm would be detected at an infrasound array located in Stillwater, OK.

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